

Docket No. H0002126
2929-0159P
Appl. No.: 10/046,847
Art Unit: 1732
Amendment dated December 1, 2003
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REMARKS

Applicants appreciate the Examiner's thorough consideration provided in the present application. Claims 1-10 and 12-15 are currently pending in the instant application. Claims 1, 8 and 10 have been amended. Claim 11 has been cancelled. Claims 1, 8, 10 and 15 are independent. Claim 15 has been added for the Examiner's consideration. Applicants submit that claim 15 is fully supported by the original written description, including but not limited to, paragraphs 0015-0019 and 0034-0039, and FIGs. 5-7 of the present application. Reconsideration of the present application is earnestly solicited.

Priority

Applicants appreciate the Examiner's acknowledgement of Applicants claim for domestic priority under 35 U.S.C. § 119(e).

Drawings

Applicants would appreciate the Examiner's indication of acceptance of the drawings in the present application, e.g., the drawings do not appear to have been reviewed by the Official Draftsperson.

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Claim Rejections Under 35 U.S.C. § 102

Claims 1-14 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Benoit et al. (U.S. Patent No. 5,114,332). This rejection is respectfully traversed.

In light of the foregoing amendments to the claims, Applicants respectfully submit that all of the rejections have been obviated and/or rendered moot. Without conceding the propriety of the Examiner's rejection, but merely to expedite the prosecution of the present application, Applicants have amended claims 1, 8 and 10. Accordingly, this rejection has been obviated and/or rendered moot.

Applicants submit that the prior art of record fails to teach or suggest each and every limitation of the unique combination of limitations of the claimed invention. Accordingly, this rejection should be withdrawn. For example, with respect to claim 1, Applicants submit that the prior art of record fails to teach or suggest each and every limitation of the unique combination of limitations of the claimed invention, including the feature(s) of: "an anisotropic diffuser member, said diffuser member comprising a fibrous composite having *a plurality of discontinuous fibers each having a respective length, said fibers arranged in a lay-up with said length of each fiber being discontinuously*

arranged in a lay-up plane to achieve a substantially uniform heat transfer within said diffuser member, wherein said diffuser member is arranged in a position permitting a rapid transfer of heat along said length of each fiber within say lay-up plane to said mold member.” (emphasis added) Accordingly, this rejection should be withdrawn.

With respect to claim 8, Applicants submit that the prior art of record fails to teach or suggest each and every limitation of the unique combination of limitations of the claimed invention, including the feature(s) of: “diffuser plate comprising a *fibrous composite having a plurality of discontinuous fibers each having a respective length, said fibers arranged in a lay-up with said length of each fiber being discontinuously arranged in a lay-up plane to achieve a substantially uniform heat transfer within said diffuser member*, wherein said diffuser member permits *a rapid transfer of heat along said length of each fiber within said lay-up plane.*” (emphasis added) Accordingly, this rejection should be withdrawn.

With respect to claim 10, Applicants submit that the prior art of record fails to teach or suggest each and every limitation of the unique combination of limitations of the claimed invention, including the feature(s) of: “arranging an anisotropic diffuser member along a surface of said mold member for

distributing heat uniformly from said heat source through said anisotropic diffuser member, *wherein said diffuser member includes a fibrous reinforced composite having a plurality of discontinuous fibers each having a respective length, said fibers being arranged in a lay-up with said length of each fiber being discontinuously arranged to achieve a substantially uniform distribution of heat within said diffuser member.*" (emphasis added) Accordingly, this rejection should be withdrawn.

With respect to Benoit et al., Applicants submit that the objective, structure and applications of this molding apparatus are different than that of the claimed invention. Specifically, Applicants submit that it is clear that Benoit is directed toward the targeted and rapid distribution of heat to specific areas within a mold assembly, e.g., see FIG. 4. As described by Benoit et al., the rapid distribution of heat is specifically sought for the hot pressing of parts made of refractory material. In Benoit et al., a structure is provided that includes uninterrupted "thermally conductive fibers oriented so that a preferential heat transfer occurs towards the areas of the part which are furthest away from its edges of the part, ensuring homogeneous heating or cooling throughout the part at all times." (see Abstract)

The Examiner will further appreciate that the fibers are arranged to achieve a rapid flow of heat to particular locations within the alleged diffuser member, e.g., to exterior portions of the part being molded. In order to achieve this precise heat transfer, Benoit et al. clearly relies upon continuous, e.g., "fibers uninterrupted from one side to another of said element and disposed in a refractory matrix which is less thermally conductive than said fibers." (see claim 1 of Benoit et al.)

In contrast, the claimed invention is clearly directed toward a diffuser member that includes a fibrous composite constructed from a plurality of *discontinuous* fibers. As described in the present application, this is intended to provide uniform heat distribution throughout the diffuser member, e.g., to avoid hot spots within the diffuser member. In Benoit et al., the alleged diffuser member is purposefully designed to transfer as much of the heat from the heat source to discrete positions on the diffuser member, e.g., the opposite of the claimed invention. Accordingly, the rejection based upon the Benoit et al. reference should be withdrawn.

With respect to additional claim 15, Applicants submit that the claimed invention is clearly not taught or suggested by the prior art of record. As described at paragraph 0035 (and shown in FIG. 5) of the present application,

“With this type of diffuser member 100, heat will travel significantly faster in the direction of the fibers, e.g. along their length L, than it will through the direction of the lay-up, e.g. directions transverse to the length L of the fibers 101. When heat is applied in the direction of the lay-up, the heat is diffused rapidly along the lengths L of the fibers 101 and travels much slower against the grain of these fibers 101.” The Examiner will note that fibers are shown extending from right to left in FIG. 5. Although fibers also extend in other directions within the same plane of each layer of fibers, none of these fibers are arranged so that they extend transverse to the lay-up, e.g., in an upward and downward direction when viewed with respect to FIG. 5, e.g., against the grain of the fibers within any single layer of the lay-up.

Random or discontinuous chopped fibers that form the individual layers of the lay-up, e.g., multiple layers of fibers that have been dispersed within a common plane are shown in the side section of FIG. 5. Each row of fibers shown in FIG. 5 represents a separate layer of fibers formed within the common plane of the layer. These fibers are all co-planer, i.e. a fiber in a single layer of the lay-up extending as shown in FIG. 5 and another fiber within the same layer extending into or out of the paper with respect to FIG. 5, and do not include fibers extending vertically with respect to the diffuser member shown in

FIG. 5. For example, when forming the diffuser member, discontinuous fibers that have been dropped or sprinkled form a first layer that extend within a common plane. Successive layers of discontinuous fibers are then formed on top of each layer until the entire fibrous lay-up structure has been formed. However, none of these fibers extend transversely, e.g., upward and downward in FIG. 5, with respect to the lay-up. Accordingly, this rejection should be withdrawn and the present application should be passed to Issue.

CONCLUSION

Since the remaining references cited by the Examiner have not been utilized to reject the claims, but merely to show the state-of-the-art, no further comments are deemed necessary with respect thereto.

All the stated grounds of rejection have been properly traversed and/or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all presently pending rejections and that they be withdrawn.

It is believed that a full and complete response has been made to the Office Action, and that as such, the Examiner is respectfully requested to send the application to Issue.

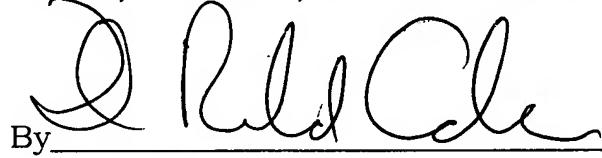
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In the event there are any matters remaining in this application, the Examiner is invited to contact Matthew T. Shanley, Registration No. 47,074 at (703) 205-8000 in the Washington, D.C. area.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

BIRCH, STEWART, KOLASCH & BIRCH, LLP


By _____

D. Richard Anderson
Reg. No. 40,439


DRA/MTS/mmi

P. O. Box 747
Falls Church, VA 22040-0747
(703) 205-8000